

REMARKS

The indication of allowable subject matter in claims 9 and 14-16 is acknowledged and appreciated. In view of the following remarks, it is respectfully submitted that all claims are in condition for allowance.

The Abstract is objected to as allegedly not mentioning the technique for preventing loss of shadow details. However, it is respectfully submitted that the Abstract indeed describes one exemplary device and associated functionality which enables preventing loss of shadow details as evidenced throughout Applicants' specification. Nonetheless, it is respectfully submitted that the Abstract, as amended, obviates the alleged informality. Accordingly, it is respectfully requested that this objection be withdrawn.

Claims 1 and 19 are independent and stand rejected under 35 U.S.C. § 102(e) as being anticipated by Koyama '686 ("Koyama"). This rejection is respectfully traversed for the following reasons.

Claim 1 recites in pertinent part, "an output unit operable to output ... brightness information indicating a difference between the reset voltage and the read voltage when normal light is incident to the imaging device and the read voltage is in a predetermined range, and brightness information indicating high brightness when strong light is incident to the imaging device and the read voltage is not in the predetermined range" (emphasis added). Claim 19 recites a similar feature in method format. One exemplary description for the relativity between normal/strong light is provided on page 26, lines 18-22 of Applicants' specification. The Examiner relies on paragraphs 73 and 84 of Koyama as allegedly disclosing the aforementioned features.

However, Koyama is directed merely to detecting and correcting a defective pixel during a manufacturing process, as described in paragraphs 73 and 84. It is respectfully submitted that Koyama is completely silent as to outputting detected results *in relation to relative light strengths*. Indeed, Koyama expressly discloses detection of a non-defective pixel cell and a defective pixel cell by applying uniform light, and performing a conversion to the defective pixel. Specifically, Koyama discloses (emphasis added):

... when manufacturing solid-state image pickup devices, the solid-state image pickup devices on a wafer *are uniformly illuminated* to bring light to the respective floating diodes 3 (photodiodes). A signal output is measured for each pixel. If a pixel whose output is smaller than or equal to a predetermined level (i.e., a defective pixel which is a so-called black defect in a bright background), the detected defective pixel is converted to a pixel whose electric charge accumulation region N1 has a predetermined potential irrespective of the presence or absence of incident light.

Accordingly, in direct contrast to the present invention, Koyama discloses only a uniform detection among the pixels whereby defective pixel(s) are detected and converted. Whereas, according to one aspect of the present invention, outputted brightness information can be based on *both* when normal light is incident to the imaging device and the read voltage is in a predetermined range and when strong light is incident to the imaging device and the read voltage is not in the predetermined range. The present invention can therefore make it possible to take a preventive measure against shadow detail loss even for incident light much weaker than such strong light that causes a change in a voltage at reset. Accordingly, the present invention can enable obviating shadow detail loss in an image underexposed due to strong incident light compared with conventional design, and can further eliminate an adverse effect caused by changing voltage at reset (*see, e.g.,* page 5, lines 4-14 of Applicants' specification). Koyama is silent as to such a relative light-strength detecting scheme (i.e., normal light and strong light) and discloses only a uniform light detecting scheme.

Moreover, Koyama is further silent as to the issues related to a change in the output voltage at reset causing shadow detail loss of an image (e.g., even subtle changes in the output voltage at reset directly affects brightness information). As recognized and considered solely by Applicants, changes in an output voltage at reset can be detected only when the change is large enough to be detected, so as to make it impossible to completely eliminate an adverse effect caused by such change. In addition, an output voltage at reset changes acutely when strong light is incident, making accurate detection of such change difficult so that preventing shadow detail loss of an image is not an easy task (*see, e.g.*, page 2, lines 6-20 of Applicants' specification). Accordingly, Koyama does not provide any motivation or suggestion for reaching the claimed invention, and is focused only on conversion of a defective pixel based on uniform light detection.

As anticipation under 35 U.S.C. § 102 requires that each and every element of the claim be disclosed, either expressly or inherently (noting that "inherency may not be established by probabilities or possibilities", *Scaltech Inc. v. Retec/Tetra*, 178 F.3d 1378 (Fed. Cir. 1999)), in a single prior art reference, *Akzo N.V. v. U.S. Int'l Trade Commission*, 808 F.2d 1471 (Fed. Cir. 1986), based on the forgoing, it is submitted that Koyama does not anticipate claims 1 and 19, nor any claim dependent thereon. The Examiner is directed to MPEP § 2143.03 under the section entitled "All Claim Limitations Must Be Taught or Suggested", which sets forth the applicable standard for establishing obviousness under § 103:

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. (citing *In re Royka*, 180 USPQ 580 (CCPA 1974)).

In the instant case, the pending rejections do not "establish *prima facie* obviousness of [the] claimed invention" as recited in the pending claims because the proposed combinations fail the "all the claim limitations" standard required under § 103.

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as claim 1 is patentable for the reasons set forth above, it is respectfully submitted that all claims dependent thereon are also patentable. In addition, it is respectfully submitted that the dependent claims are patentable based on their own merits by adding novel and non-obvious features to the combination. Based on the foregoing, it is respectfully submitted that all pending claims are patentable over the cited prior art. Accordingly, it is respectfully requested that the rejections under 35 U.S.C. § 102/103 be withdrawn.

CONCLUSION

Having fully and completely responded to the Office Action, Applicants submit that all of the claims are now in condition for allowance, an indication of which is respectfully solicited. If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, the Examiner is requested to call Applicants' attorney at the telephone number shown below. To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,
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